Nasa news asteroid 2020

This is the kind of world we live in these days that the National Aeronautics and Space Administration feels the need to make an official statement about how we don't all die in a earth-based collision with a giant asteroid next month. But so the rumors are fueled by the internet, so here we are. First, false rumors: A large asteroid will smash our planet, 'apparently' near Puerto Rico, something between September 15 and 28, 2015, which will cause massive destruction on the U.S. Atlantic and Gulf coasts, as well as Mexico, Central America and South America. The scientific basis - not a single piece of evidence - is not that an asteroid or any other celestial object would affect Earth on these dates, Said Paul Chodas, head of NASA's Near-Earth Object office at the Jet Propulsion Laboratory in Pasadena, California. If there was an object big enough to do this kind of destruction in September, we'd have seen something like this. The truth is that NASA has monitored these things, courtesy of the Office of Objects Near Earth at the Jet Propulsion Laboratory in Pasadena, California, and every known object on the list has less than a 0.01 percent chance of a blow in the next 100 years. The agency tracks and records asteroids and comets that pass 30 miles from Earth using Earth and space telescopes, saying in a statement that there are no known credible threats to date - only continuous and harmless self-loathing, tiny asteroids that burn in the atmosphere. NASA also usually knows exactly when something like this would happen if it were true, and it wouldn't give a funny two-week window of uncertainty, given that we can now calculate the exact date of Halley's comet's return on July 28, 2061 per minute. Remember all the recent doomsday predictions, like all those close to miss asteroids, were anything but; 21 December 2012; and of course Harold Camping and his joint BS tour since 2011, which heralds the end of the world. Again, there is no existing evidence that an asteroid or any other celestial object is on the way that will affect Earth, Chodas said. In fact, none of the known objects has any credible chance of hitting our planet in the next century. I have a feeling ExtremeTech readers weren't particularly concerned about this, but just in case, there are facts. Earth has been bombarded by space rocks throughout history, but we're lucky no major slammed on the planet in recent times. Astronomers keep an eye on the sky and hope to spot potential impacts far enough in advance to do something about it, and one of the most alarming objects is 99942 Apophis. This skyscraper-sized asteroid could still hit Earth in 2068, according to new analysis from the University of Hawaii and NASA's Jet Propulsion Laboratory. Scientists Apophis in 2004 raised the alarm when initial observations suggest it has an alarmingly high 2.4 percent chance of being hit by Earth in 2029. Thankfully, a further study lowered this probability to zero. However, astronomers have been observing Apophis since then - currently considered the third highest threat to Earth, behind 101955 Bennu and 29,075 (1950 DA). However, the highest risks to the effects for these objects are centuries. NASA's risk watch table shows a 1 in 150,000 chance that Apophis will strike Earth in 2068, but this ignores a phenomenon known as the Yarkovsky effect. When asteroids fly through space, they absorb energy from the sun. This energy is soated back into space as heat, but the process is not uniform over the entire surface of the object. The result is a small but interchangeable thrust that changes the orbit of an object. Davide Farnocchia at NASA and Dave Tholen of the University of Hawaii used data from the Subaru telescope to try to pin down how much the Yarkovsky effect is changing our options. That's our best guess at Apophis's form. Tholen says that the real risk of impact is likely closer to 1 in 530,000, a number used by NEODyS surveillance services for impact that includes the Yarkovsky effect. The new sightings are likely to push NASA's guard to a similarly low level. So, it's probably less likely that Apophis will hit Earth in a few decades, but astronomers will have to monitor its orbit over time to make sure. There is still a very real, no-zero chance that Apophis will be caught in Earth's gravity in 2068. You don't want to take any chances with an object like Apophis. Although it's not quite a mass extinction, the impact would be a disaster. It's a simple thing of physics – Apophis, which hits earth, has an explosion of 1,151 megatons of TNT as a result. By comparison, the largest nuclear weapon ever activated by humans was about 57 megatons. The Krakatoe eruption of 1883 was about 200 megatons. Apophis could level a small country, cause huge tidal waves and start widespread wildfires. All in all, a pretty bad day for Earth. In case Apophis is ever on a collision course, astronomers should tell us well in advance. It might even be early enough to try that asteroid-ing system, which we're always talking about. Now Read: NASA's mission to the distant space rock could reveal clues about the early solar system Marina KorenOctober 20, 2020A million miles from Earth, an asteroid and a spacecraft travel together. The asteroid, as tall as a skyscraper, is ancient, almost as old as the solar system itself. The spacecraft, dispatched recently, orbits an asteroid like a tiny mechanical moon. Tonight, if all goes according to plan, the spacecraft will crash towards the asteroid, touch its surface and hijack some rocks before it re-launches. As NASA is counting down the clocks to this maneuver, a simple question comes to mind: Why? Historically they have not been kind to Earth, as can the truncated story of dinosaurs. No Hollywood script involving people is going to be good for us. This asteroid, known as Bennu, has a 1-to-2,700 chance of hitting Earth in the late 22nd century, and would likely cause catastrophic damage across the planet. For most of human history, the only way for scientists to touch an asteroid was to wait for small pieces of one to fall through earth's atmosphere and explore the Earth. Incoming rocks can be broken down and even evaporated during their infantry descent, so the world census of meteorites – the names that were made to asteroids when they came through the atmosphere – consists only of the heaviest samples. On Earth, too, meteorites are exposed to the same environmental conditions that smooth out earth's rocks over time, and details of their cosmetic origins are erode. The spacecraft, which orbits Bennu, is designed to bring samples of asteroids home in a tight state, without drama or damage, so scientists can explore the mystery of how we got here in the first place. At the moment, Bennu is not a threat to our existence, but is a more exciting target for discovery: Asteroid samples could contain clues about the early forces that shaped the Earth, overwhelm its surface with oceans, and enrich water with molecules that helped create life. We're probably missing a tone of information about these asteroids just because we have this great atmosphere that protects us from these things, says Hannah Kaplan, a planetary scientist at NASA's Goddard Space Flight Center and a member of the Bennu mission. Travelling to and from the asteroid is the only way to bring home these cosmetic souvenirs of the unsightly. As astronauts, the samples return to Earth safely in a heat-shielding capsule. The Japanese space agency JAXA has deployed these missions to two asteroids; The first mission returned with samples in 2010, and the second is currently on its way back to Earth. NASA's mission in Benn, known as OSIRIS-REx, which means – take a deep breath here – Origins, Spectral Interpretation, Resource Identification, Security-Regolith Explorer – is expected to bring home the largest extract from an asteroid to date, the largest return pattern since Apollo astronauts came home from pieces of the moon. OSIRIS-REx has spent nearly two years in orbit around Bennu, accumulating a copy of its surface data. Observations indicate that the landscape is covered with organic molecules, and the terrain bears the markings of a guided past. Kaplan and her colleagues noticed bright streaks on some of Bennu's water, which could have been made of mineral carbonate left by water. A few billion years ago, when the solar system was turning into shape, Bennu was part of a much larger asteroid, with ice all over the rock. In the heat of those early years, some asteroid ice melted and ran through its interior, behind hollow orbits that scientists can see today in the rolling stock. Scientists believe that ancient solar asteroids may be responsible for supplying water to early Earth. Remarkably, the origin of our oceans, directly in the solar system, remains a mystery that could be solved by the bennu particles. We really want to know if the water that's tied in Bennu's hydrated minerals has signatures that resemble water on Earth, daniella dellaGiustina, an OSIRIS-REx scientist who works at the University of Arizona's Lunar and Planetary Laboratory. The researchers also want to see if the organic materials they are jumping from Bennu are similar to the ancient predecessors that led to life on Earth.Asteroids have possibly shaped the paths of other worlds in the solar system and beyond. If we really brought water and organic materials to Earth, we'd probably bring them to Mars. They would be brought to Venus, andy Rivkin, a planetary astronomer at johns hopkins' laboratory of physics, who studies asteroids. And these kinds of processes would probably happen in other solar systems. Asteroid sampling is a dangerous task and, in a sense OSIRIS-REx is not equipped for specific challenges, Bennu. Observations of the telescope from afar suggest that Bennu's surface will resemble a sandy shoreline, and engineers have designed the mission with this image in mind. Instead, the spacecraft revealed a relentless, balm-filled landscape that occasionally brings fragments the size of coins into space. It was a scary moment, Kaplan said of the reality review team. How are we going to get a sample back from this thing? The team eventually chose a sampling site that calls not only scientists from the team who want to collect the most interesting samples, but also engineers who want to avoid destroying the spacecraft. After the thrusters, OSIRIS-REx will leave a comfortable orbit around Bennu and move to a small sail, the size of a few parking spaces, surrounded by rocks the size of buildings. Within seconds, the robotic arm will insoud the regolite with nitrogen gas and then clear the floating detritus in its home, before the spacecraft returns to its orbit. NASA won't know how much material the spacecraft will immediately wipe out. Later this week, engineers will order OSIRIS-REx to spin around, a smart move to calculate how much new mass the probe has acquired. If mission leaders feel they have enough, the samples will be weaned until the spacecraft returns to Earth in late 2023. Olivia Billett, an OSIRIS-REx systems and science engineer from Lockheed Martin who built the spacecraft, believes this is the worst-case scenario, as the descent puts the spacecraft at risk. It's a decision that I really We don't have to work, she told me. The mission is designed to bring only two uni (about 60 grams) of material. In astronomy, scientists are accustomed to working with fragments of patterns, extracting cosmic insights from even the smallest grains. But when you travel millions of miles, you want to bring home as many souvenirs as you can. The journey home will be more familiar, but still risky. Keiko Nakamura-Messenger, the NASA scientist who will be curing Bennu samples, remembers the pain of one NASA mission in the early 2000s, the first attempt to return the agency's samples after the Apollo era. The spacecraft successfully sampled the solar wind, the solar's constant stream of high-energy particles, but the return capsule crashed after its parachute failed to install. The team spent days searching the Utah desert for strait capsules and washing contaminants. They found enough material, even after this minor catastrophe, to reveal new information about the sun and the solar system, and stored some particles for future scientists to study. By comparison, an exhi-in-man from Bennu could be a treasure trove. No matter what it will be really, really valuable, nakamura-Messenger told me. We won't be late for a single grain.

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